

C11 a middle elongated portion of variable length that is at least partly inserted inside the body, comprising a signal conduit that electronically connects the energy source and the spark gap module.

sub 25 47. (Amended) An interventional device, comprising:
a distal portion comprising an incandescent lamp for placement inside a body and for generating short duration high intensity light waves;
C12 a proximal end connected to an energy source; and
a middle elongated portion of variable length that is at least partly inserted inside the body, comprising a signal conduit that electronically connects the energy source and the incandescent lamp.

Please add new claims 52 and 53 as follows:

sub 62 52. (New) The interventional device of claim 41, wherein the interventional device is selected from the group consisting of a catheter, an endoscope, a guide wire, a needle, and an introducer.

C13 53. (New) The interventional device of claim 47, wherein the interventional device is selected from the group consisting of a catheter, an endoscope, a guide wire, a needle, and an introducer.

REMARKS

Claims 1, 3-12, 14-17, 20-30, 32-44, and 47-50 are pending in the application, all of which were rejected in the Office Action. New claims 52 and 53 are added, and claims 1, 3-8, 12, 14, 16, 20, 26, 29, 30, 32, 36, 37, 41, and 47 are amended by the present Amendment. Upon entry of the present Amendment, claims 1, 3-12, 14-17, 20-30, 32-44, 47-50, and 52-53 are pending and presented for reconsideration. Applicant respectfully submits that no new matter is introduced by the present Amendment. A copy of pending claims, as amended herein, is enclosed for the Examiner's convenience.

Claim 1 is hereby amended to recite with more particularity that the claimed interventional device generates sonoluminescent light by focusing sound waves through a lens.

Support for the amendment may be found in the Specification at, for example, page 12, lines 6-10 and 20-21. Claims 3-8, 12, and 14 are amended so that they depend from a pending claim; the support of such amendments can be found in the originally filed claims.

Claims 16, 20, 32, 41, and 47 are amended to recite structural details of certain embodiments of the present invention. Support for the amendment may be found in the Specification at, for example, page 6, lines 1-17, and FIG. 1. Claims 29 and 36 are amended to recite an interventional device selected from the group consisting of a catheter, an endoscope, a guide wire, a needle, and an introducer. New claims 52 and 53 recite an interventional device selected from the same group. Support for the amendment and the new claims may be found in the Specification at, for example, page 3, lines 2-6. Claims 26, 30 and 37 are amended to depend from the correct pending claims; the support of such amendments can be found in the originally filed claims.

Rejection of Claims 3-9, 12 and 14 under 35 U.S.C. § 112, second paragraph

Claims 3-9, 12, and 14 were rejected under 35 U.S.C. § 112, second paragraph for depending on cancelled claims. Claims 3-8, 12, and 14 have been amended to depend from pending claim 1. Claim 9 depends from newly amended claim 8. Applicant respectfully submits that the amendments overcome the rejections under 35 U.S.C. § 112.

Rejection of Claims 1, 5-8, 10-12 and 15-17 under 35 U.S.C. § 102

Claims 1, 5-8, 10-12 and 15-17 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 4,893,614 to Takayama et al. ("Takayama").

Amended claim 1 recites an interventional device including a sonoluminescent light module for placement inside a body. The module includes an acoustic transducer, a housing enclosing an acoustic conducting medium, and a lens between the acoustic transducer and the acoustic conducting medium. At least a portion of the housing is optically transparent. The acoustic transducer generates sound waves that are focused by the lens into the acoustic conducting medium. As a result, sonoluminescent light is generated.

Takayama describes an extracorporeal lithotripter including a pseudo-ellipsoidal shaped housing filled with liquid. A shock wave is generated at a first focus of the pseudo-ellipsoid,

resulting in impact at the second focus where the calculus is positioned. See Abstract and Summary of Invention.

Takayama does not teach or suggest an interventional device that includes a sonoluminescent light module. As defined in the present Application, the term “sonoluminescence” refers to luminescence produced by high frequency sound waves (page 12, lines 5-6). Nowhere in Takayama is light production by sound waves described or suggested.

Further, Takayama does not teach or suggest an interventional device comprising a housing enclosing an acoustic conducting medium where at least a portion of the housing is optically transparent. This is because Takayama’s objective is not to generate or apply light to a body but a shock wave having enough pressure to disintegrate a calculus. See column 5, lines 32-37.

Amended claim 16 recites an interventional device comprising a distal portion with an x-ray generating light source for placement inside a body, a proximal end and a middle portion. Takayama clearly does not teach or suggest an x-ray-generating light source.

Because Takayama does not teach or suggest one or more aspects of amended claims 1 and 16, and of claims depending therefrom, Applicant respectfully submits that the rejections under U.S.C. § 102 should be reconsidered and withdrawn.

Rejection of Claims 3, 4, 9, 14, 20-30, 32-44, and 47-50 under 35 U.S.C. § 103(a)

Claims 3, 4, 9, 14, 20-30, 32-44, and 47-50 were rejected under 35 U.S.C. § 103(a) over Takayama in view of U.S. Patent No. 5,601,526 to Chapelon et al. (“Chapelon”).

Chapelon describes a treatment device that delivers ultrasonic waves that produce thermal and cavitation effects. See column 1, line 8-10. Chapelon also describes control means for restricting ultrasonic waves within a defined region of tissue to limit damage to the surrounding area. See column 2, lines 40-52.

With respect to claims 3, 4, 9, and 14 in the present Application:

Amended claims 3, 4, 9 and 14 now depend from amended claim 1. Chapelon does not teach or suggest an interventional device comprising a sonoluminescent light module, an element

missing from Takayama with respect to claim 1. Chapelon describes exclusively the thermal effect and the cavitation effect (formation and collapse of low-pressure bubbles in liquids) of ultrasound waves and their use in destroying tissues, and does not allude to any sonoluminescent effect. See, e.g., column 1, lines 17-34, and column 2, lines 33-56. Moreover, Chapelon does not teach or suggest a housing that has at least a portion that is optically transparent, another element missing from Takayama with respect to claim 1. Chapelon's objective is to restrict tissue damage to a defined region and, therefore, Chapelon does not suggest the need for a housing that is transparent to light.

With respect to claims 20-30, 32-44 and 47-50 in the present Application:

The four independent claims, claims 20, 32, 41, and 47 have been amended to recite an interventional device comprising a distal portion that includes a light source for placement inside a body, a proximal portion connected to an energy source and a middle portion of variable length that is at least partly inserted inside the body and which includes a signal conduit that electronically connects the energy source and the light source; the light source is an arc lamp, a fluorescent light source, a spark gap module or an incandescent lamp respectively.

Takayama and Chapelon, taken individually or in combination, do not teach or suggest an interventional device comprising a distal portion that includes a light source as discussed in the previous sections. Neither do they teach or suggest a middle portion of variable length that is at least partly inserted inside the body and which includes a signal conduit that electronically connects the energy source and the light source. Whereas Takayama describes an extracorporeal device, Chapelon's endo-cavitary embodiment, shown in its FIG. 9, is limited to having a cooling device "independent of therapy device." See Chapelon, column 12, line 63-column 13, line 14. The cooling device described in Chapelon does not include a signal conduit that electronically connects an energy source and a light source.

Because Takayama and Chapelon, individually or in combination, do not teach or suggest one or more aspects of amended claims 20, 32, 41, and 47, and of claims depending therefrom, Applicant respectfully requests that the rejections under U.S.C. § 103 should be reconsidered and withdrawn.

New claims 52-53

New claim 52 depends from claim 41 and new claim 53 depends from claim 47. As the foregoing discussion shows, the new claims, as dependent claims, are both patentable over cited references.

INFORMATION DISCLOSURE STATEMENT (IDS)

Applicant notes that initialed copies of PTO-1449 forms for IDSs and Supplemental IDSs submitted by Applicant on September 2, 1997, October 31, 1997 and June 3, 1998, together listing references AA-AAZ, BA-BT, and CA-CM, have not been returned and hereby respectfully requests such action by the Examiner.

CONCLUSION

Applicant requests that the Examiner reconsider the application and claims in light of the foregoing Amendment and Response, and respectfully submits that the pending claims (i.e., 1, 3-12, 14-17, 20-30, 32-44, 47-50, and 52-53), as amended, are in condition for allowance. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues, and to work with the Examiner toward placing the application in condition for allowance.

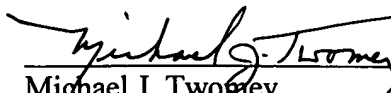
A petition and fee for a two-month Extension of Time for Response is submitted herewith. Applicant believes that no additional fees are necessitated by the present Amendment. However, in the event that any additional fees are due, the Commissioner is hereby authorized to charge any such fees to Attorney's Deposit Account No. 20-0531.

Respectfully submitted,

Date: August 10, 2000
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